

XIX MEĐUNARODNO SAVJETOVANJE  
19th INTERNATIONAL CONFERENCE

# KRMIVA 2012

ZBORNİK SAŽETAKA ❖ BOOK OF ABSTRACTS

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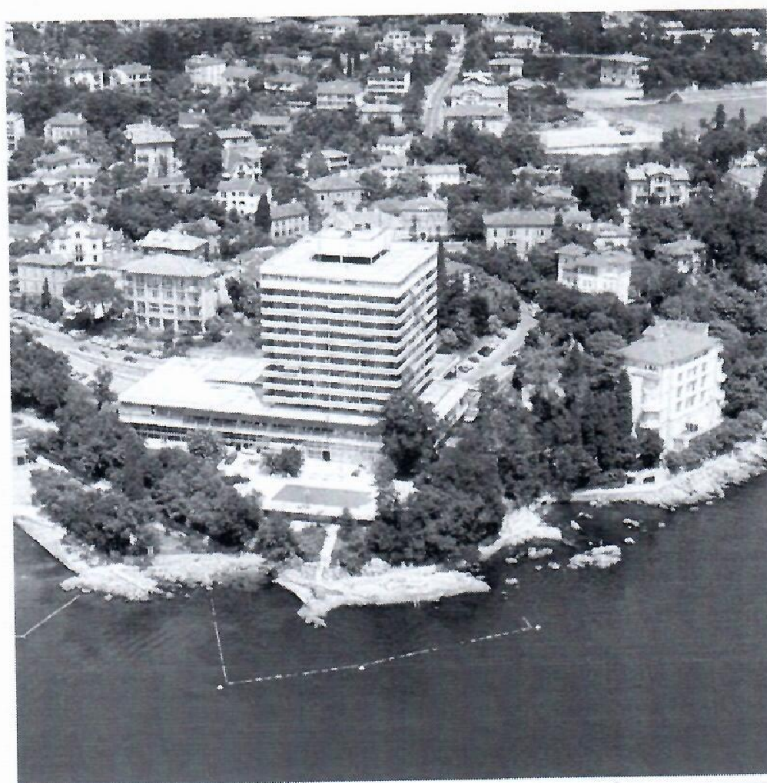
30. svibnja – 1. lipnja 2012. ❖

May, 30 – June, 1, 2012



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**AKUMULACIJA NIKLA U *Trifolium Pratense L.*  
GAJENOJ NA KONTAMINIRANOM TLU**  
**ACCUMULATION OF NICKEL IN *Trifolium Pratense L.*  
GROWN ON CONTAMINATED SOIL**

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### SAŽETAK

U posljednje vrijeme povećana je koncentracija teških kovina na nekim poljoprivrednim površinama kao posljedica antropogenog utjecaja. Cilj rada je bio da se utvrdi nivo nikla u *Trifolium pratense L.* gajenoj na fluvisolu sa njegovim povećanim sadržajem, radi dobijanja informacije o zdravstvenoj ispravnosti ovog hraniva prilikom gajanja na kontaminiranom tlu. Ispitivanja su izvedena na poljoprivrednim površinama Kruševačke kotline u R Srbiji. Uzorkovanje tla i biljnog materijala je izvršeno tokom svibnja 2011. godine, u drugoj proizvodnoj godini crvene djeteline. U uzorcima tla ispitivanih lokaliteta ukupan sadržaj Ni je bio u intervalu od 265.70 do 286.05 mg/kg, čime je prekoračena maksimalno dozvoljena količina od 50 mg/kg. Sadržaj nikla u *Trifolium pratense L.* nije bio povišen i iznosio je u prosjeku 3.67 mg/kg suve materije, što je ispod kritičnih i toksičnih koncentracija za biljke. Konstatovano je da akumulacija teških kovina u biljkama nije zavisila samo od ukupnog sadržaja u tlu, nego i afiniteta biljke, te individualnog ili interaktivnog dejstva raznih svojstava tla. Dominantan utjecaj na akumulaciju Ni u biljkama imala je pH vrijednost zemljišta. Neophodna je daljnja kontrola sadržaja nikla na ispitivanom području, kako bi se spriječio njegov ulazak u lanac prehrane i osigurala proizvodnja zdrave hrane.

### Ključne riječi:

nikl, stočna hrana, fluvisol, kontaminacija

## **ABSTRACT**

Recently, heavy metals concentrations increased in some agricultural areas due to the consequences of anthropogenic impacts. The aim of this study was to determine the level of Ni in *Trifolium pratense* L. grown on fluvisol with his increased content, in order to obtain information on safety of these nutrients when growing on contaminated soil. The examination was conducted in agricultural areas in the Krusevac basin in R Serbia. Sampling of soil and plant material was carried out during May 2011, in the second year of production of red clover. The total content of Ni in soil samples was in the range 265.70–286.05 mg/kg, which exceeded the maximum permitted amount of 50 mg/kg. The content of nickel in *Trifolium pratense* L. was 3.67 mg/kg, which is below the critical and toxic concentrations to plants. It was concluded that the accumulation of heavy metals in plants did not depend only on the total content in soil, but also the affinity of the plant, and individual and interactive effects of various soil properties. The dominant influence on the accumulation of Ni in plants had a soil pH value. It is necessary to further control of nickel in the investigated area, in order to prevent his entry into the food chain and provide healthy food.

### **Keywords:**

nickel, feed, fluvisol, contamination

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